

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

What is claimed is:

Claim 1 (original): A film comprising a nano-crystalline diamond matrix, wherein the nano-crystalline diamond matrix is substantially free of graphite inclusions.

Claim 2 (original): The film of claim 1, wherein the infrared absorption peaks between 3200 cm^{-1} and 2800 cm^{-1} of the nano-crystalline diamond matrix are at 2930 cm^{-1} and 2880 cm^{-1} only.

Claim 3 (original): The film of claim 1, wherein the nano-crystalline diamond matrix has no infrared absorption peaks at 2980 cm^{-1} and 3100 cm^{-1} .

Claim 4 (original): The film of claim 1, wherein the nano-crystalline diamond matrix has a hardness of at least 60 GPa.

Claim 5 (original): The film of claim 1, wherein the film is between 40 nm and 1000 nm thick.

Claim 6 (original): The film of claim 1, wherein the film is thermally stable at $450\text{ }^{\circ}\text{C}$ or higher.

Claim 7 (original): The film of claim 1, wherein the film has an average root mean square surface roughness of less than 5.00 nm.

Claims 8-31 (withdrawn)